

UNITED STATES CLIMATE ALLIANCE

Short-Lived Climate Pollutant Factsheet

An Initiative of the U.S. Climate Alliance

On Friday, June 1, the U.S. Climate Alliance challenged the world ([LINK TO CHALLENGE LANGUAGE](#)) to cut emissions of potent short-lived climate pollutants to levels needed to meet the goals of the Paris Climate Agreement, and to bring new commitments and actions to address this critical area of need to the Global Climate Action Summit in September.

Potent “Super Pollutants” Have Big Climate, Health Impacts

Short-lived climate pollutants are potent climate forcers and harmful air pollutants that have an outsized impact on climate change in the near-term. Compared to CO₂ and other long-lived climate pollutants, which stay in the atmosphere for centuries, short-lived climate pollutants have far more warming impact on a gram-to-gram basis, and have a lifetime ranging from days (in the case of black carbon) to decades. Reducing emissions of these pollutants can significantly reduce the rate of climate change in the near-term and is necessary for meeting the goals of the Paris Agreement on climate change, along with significant reductions in carbon dioxide emissions. Short-lived pollutants include:

- **Methane:** Methane is responsible for about 20-25 percent of current global climate forcing and contributes to the formation of tropospheric ozone, which is itself a short-lived climate forcer and harmful to human health and agricultural production. Methane is the primary component of natural gas. Capturing and utilizing methane improves health and safety, and offers billions of dollars in potential value in the U.S. Quickly reducing methane emissions offers one of the greatest opportunities to reduce global warming in coming decades.
- **Hydrofluorocarbons (HFCs):** HFCs are used as refrigerants and in air conditioning, foams, aerosols, and other applications. They are the fastest growing source of greenhouse gas emissions in the U.S. and globally, and are thousands of times more potent than CO₂. Coupled with efficiency opportunities in refrigeration and cooling, phasing down the use of HFCs can deliver significant climate and energy efficiency benefits.
- **Black carbon:** Black carbon, or soot, is a component of toxic particulate matter, which is a leading environmental and health hazard. Black carbon accelerates snowmelt and sea level rise and modifies rainfall patterns. As a component of fine particulate matter, black carbon causes millions of premature deaths globally each year and is harmful to the human cardiovascular and respiratory system. Black carbon exists in the atmosphere for days, so emissions reductions deliver immediate climate and local health benefits.

Tremendous Opportunity and Benefits

The most recent *Emissions Gap Report* by the United Nations Environment Programme suggests that a collection of cost-effective strategies could virtually eliminate HFC emissions by 2035 and reduce

emissions of methane by about one-third and black carbon by 70 percent below current levels by 2030 – both in the U.S. and globally. Additional strategies targeting **super emitters** and to reduce methane from agriculture and waste could lead to significant additional methane reductions. Putting these measures in place could avoid over 2 million premature deaths annually, **improve crop productivity by over 50 million tonnes**, cut the expected rate of global warming in half through 2050, and significantly slow sea level rise.

Comment [J1]: Suggest explaining

Comment [J2]: Double check but I thought the 50mn tons figure was avoided crop losses, which I think is different from improving productivity by that amount

Comment [J3]: Cite. Although CCAC uses all three figures, they are from different reports.

Economic Opportunity in Alliance States

In Climate Alliance States and the U.S., reducing short-lived climate pollutant emissions can support economic growth and jobs in the agricultural, energy, industrial, transportation, and waste sectors. It can support health and prosperity in rural and urban economies alike. For example:

- **Dairy** and swine farms in Alliance states could support thousands of anaerobic digesters producing renewable gas and other products worth billions of dollars per year. An estimated 2,500 projects could be supported on farms in California, Minnesota, and North Carolina alone.
- The U.S. EPA estimates that about 45 percent of coal, oil, and gas methane emissions can be reduced nationally at low or negative cost. Capturing these emissions can improve mine and pipeline safety, conserve energy, and save money. The **Environmental Defense Fund** estimates that oil and gas producers in the U.S. lose \$1.5 billion each year to natural gas leaks.
- Alliance states are home to more than 250 landfill energy projects that consume methane that would otherwise be emitted or flared, and opportunities exist for nearly **100 more**.
- **Black** carbon emissions have been declining significantly in the U.S., primarily due to the use of cleaner fuels and emissions controls on diesel engines, and they are expected to be cut in half again in the coming decade.
- Strategies to reduce HFC emissions promote more energy efficient systems that lower businesses costs, support the leadership of U.S. businesses developing alternatives to HFCs, and increase the need for skilled technicians and system designers.

Comment [J4]: Cite

Comment [J5]: Is there a link to the report?

Comment [J6]: Would methane capture be profitable for these 100? Cite.

Comment [J7]: What is the economic opportunity here?

Building on Leading Activities in States

In the coming months, U.S. Climate Alliance members will formulate specific plans and commitments to significantly reduce short-lived climate pollutants and capture individual and collective opportunities to support economic growth and improve public health. Many Climate Alliance **Sstates** already have activities under way:

- California law requires reducing emissions of anthropogenic black carbon by 50 percent, and methane and HFCs by 40 percent, below 2013 levels by 2030. The State has developed a comprehensive Short-Lived Climate Pollutant Reduction Strategy to meet these goals, and has a number of regulatory, incentive, and workgroup efforts to meet these targets. **Most recently, California became the first state to regulate high-GWP HFCs.**
- In Colorado, a two-year pilot project in 2013–2015 found that after Colorado began infrared camera inspections, the percentage of facilities where leaks were detected fell more than 70 percent. The 2014 rule changes are estimated to prevent approximately 65,000 tons per year of methane and ethane from entering the atmosphere, directly and permanently reducing emissions of GHGs. The 2014 regulations reduce emissions of volatile organic compounds—

Comment [J8]: Is this correct?

another ground ozone precursor—by more than 93,000 tons per year. This is the CO2 equivalent to taking 310,000 cars off the road annually.

- Connecticut includes anaerobic digesters in its Renewable Portfolio Standard and has an ongoing anaerobic digestion pilot program.
- Hawaii has a number of clean energy goals and policies, including renewable portfolio standards, with a goal of 100% renewable energy by 2045, and energy-efficiency portfolio standards to increase demand side energy efficiency.
- Massachusetts is the first state in the country to impose annually-declining methane emissions limits (for 2018, 2019, and 2020) on natural gas distribution system operators, through regulations promulgated by the Massachusetts Department of Environmental Protection in 2017. In addition, the Massachusetts Department of Public Utilities reviews and approves annual plans developed by the natural gas distribution system operators, prioritizing the replacement of leaky pipelines and service lines.
- New York has developed a Methane Reduction Plan, including 25 measures across 5 agencies, to cut methane from oil and gas infrastructure, waste management, and agriculture. In his 2018 State of the State, Governor Cuomo directed New York agencies to develop a similar, comprehensive plan to reduce HFC emissions through a suite of regulatory, incentive, and capacity-building programs.
- Vermont's Universal Recycling Law contains an organics diversion mandate in order to reduce landfill methane generation, which is complemented by organic waste reduction and diversion goals in the state's 2014 Materials Management Plan. Efforts to address fine particulate matter and black carbon emissions include Vermont's Clean Diesel Grant Program to provide technical assistance and incentive funding for projects that reduce diesel emissions from engines, vehicles, and equipment in Vermont, and periodic wood stove change-out programs for the removal and replacement of uncertified wood heaters with lower-emitting alternatives.
- Washington State law HB 2580 creates a suite of financial incentives for Renewable Natural Gas, mandates the development of pipeline quality standards for RNG, and requires state agencies to make recommendations on RNG development.

Comment [J9]: This isn't specific to SLCPs

Widespread Support for Action

There is widespread support for reducing emissions of short-lived climate pollutants among businesses, governments, and other organizations – including commitments from major oil, gas, and chemical companies and their coalitions, the Climate and Clean Air Coalition to Reduce Short-Lived Climate Pollutants, Under2MOU jurisdictions, the entire international community under the Kigali Amendment to the Montreal Protocol, and dozens of other leading companies. The Climate Alliance will work with these and other interested organizations to expand action and develop tools and strategies to reduce emissions of these potent pollutants.

The [<https://www.usclimatealliance.org/>] is a bipartisan coalition of governors committed to reducing greenhouse gas emissions consistent with the goals of the Paris Agreement.